

### Department of Energy

Fermi Site Office Post Office Box 2000 Batavia, Illinois 60510

**DEC** 17 2010

Dr. Piermaria J. Oddone, Director Fermi National Accelerator Laboratory P. O. Box 500 Batavia, IL 60510

Dear Dr. Oddone:

SUBJECT:

CONTRACT NO. DE-AC02-07CH11359; FISCAL YEAR (FY) 2010

PERFORMANCE EVALUATION OF FERMI RESEARCH ALLIANCE, LLC (FRA)

The enclosed Department of Energy (DOE) Office of Science FY 2010 Performance Evaluation Report of Fermi Research Alliance, LLC provides an evaluation and assessment of performance. A detailed narrative regarding FRA's performance in meeting the Goals, Objectives, and Notable Outcomes is provided within Section II of the Performance Evaluation report. Below is a summary appraisal of the results of the DOE's evaluation of FRA's management and operation of the Fermi National Accelerator Laboratory during the period October 1, 2009 through September 30, 2010.

| S&T Performance Goal  | Numerical<br>Score | Letter<br>Grade | Weight | Weighted<br>Score | Total<br>Score |
|---|--------------------|-----------------|--------|-------------------|----------------|
| 1.0 Mission Accomplishment  | 3.6                | A-              | 25%    | 0.90              |                |
| 2.0 Design, Fabrication, Construction and Operations of Facilities                          | 3.6                | Α-              | 50%    | 1.80              |                |
| 3.0 Science and Technology<br>Research Project/Program<br>Management                        | 3.5                | A-              | 25%    | 0.88              |                |
|   |                    |                 |        | Total Score       | 3.6 (A-)       |
| M&O Performance Goal  | Numerical<br>Score | Letter<br>Grade | Weight | Weighted<br>Score | Total<br>Score |
| 4.0 Leadership and Stewardship of the Laboratory  | 3.4                | B+              | 25%    | 0.85              |                |
| 5.0 Integrated Safety, Health, and Environmental Protection                                 | 3.4                | B+              | 25%    | 0.85              |                |
| 6.0 Business Systems  | 3.4                | B+              | 20%    | 0.68              |                |
| 7.0 Operating, Maintaining, and<br>Renewing Facility and<br>Infrastructure Portfolio        | 3.6                | A-              | 15%    | 0.54              |                |
| 8.0 Integrated Safeguards and<br>Security Management and<br>Emergency Management<br>Systems | 3.3                | B+              | 15%    | 0.50              |                |
|   |                    |                 |        | Total Score       | 3.4 (B+)       |

In accordance with the FY 2010 Contractor Performance Evaluation and Measurement Plan (PEMP), the Total Available Performance Fee that FRA was eligible to earn during the performance evaluation period under the subject contract was \$3,550,000.00. Based on the numerical scores achieved, FRA earned a fee of \$3,337,000.00 for the FY 2010 performance period.

FY 2010 represents year four of the current five-year contract. As in the previous year, FRA has met the performance criteria for award term consideration. Therefore, FRA is eligible for its second award term extension of the subject contract for 12 months from October 1, 2014 through September 30, 2015.

Congratulations on providing another year of outstanding performance in science and operations. If you have any questions, please feel free to contact me at (630) 840-3281.

Sincerely

Mark Bollinger Acting Site Manager

Enclosure: As Stated

CC:

- G. Malosh, SC-3, FORS, w/encl.
- J. Labarge, SC-32, FORS, w/encl.
- D. Kovar, SC-26, GTN, w/encl.
- B. Stauss, FRA, w/encl.
- P. Oddone, Fermilab, w/encl.
- Y.-K. Kim, Fermilab, w/encl.
- B. Chrisman, Fermilab, w/encl.
- C. Conger, Fermilab, w/encl.
- R. Grant, Fermilab, w/encl.



### I. OVERALL SUMMARY RATING/FEE

### Performance-Based Score and Adjectival Rating:

The basis for the evaluation of Fermi Research Alliance, LLC, (the Contractor) management and operation of the Fermi National Accelerator Laboratory (the Laboratory), (Fermilab) during FY 2010 centered on the Objectives found within the following Performance Goals:

- 1.0 Provide for Efficient and Effective Mission Accomplishment
- 2.0 Provide for Efficient and Effective Design, Fabrication, Construction and Operations of Research Facilities
- 3.0 Provide Effective and Efficient Science and Technology Program Management
- 4.0 Provide Sound and Competent Leadership and Stewardship of the Laboratory
- 5.0 Sustain Excellence and Enhance Effectiveness of Integrated Safety, Health, and Environmental Protection
- 6.0 Deliver Efficient, Effective, and Responsive Business Systems and Resources that Enable the Successful Achievement of the Laboratory Mission(s)
- 7.0 Sustain Excellence in Operating, Maintaining, and Renewing the Facility and Infrastructure Portfolio to Meet Laboratory Needs
- 8.0 Sustain and Enhance the Effectiveness of Integrated Safeguards and Security Management (ISSM) and Emergency Management Systems

Each Performance Goal (Goal) was composed of two or more weighted Objectives and most Objectives had a set of performance notable outcomes, which assisted in determining the Contractor's overall performance in meeting that Objective. Each of the performance notable outcomes identified significant activities, requirements, and/or milestones important to the success of the corresponding Objective. The following describes the methodology utilized in determining the Contractor performance rating.

Each Objective within a Goal was assigned a numerical score by the evaluating office. Each evaluation measured the degree of effectiveness and performance of the Contractor in meeting the Objective and was based on the Contractor's success in meeting the set of performance notable outcomes identified for each Objective as well as other performance information available to the evaluating office from other sources to include, but not limited to, the Contractor's self-evaluation report, operational awareness (daily oversight) activities; "For Cause" reviews (if any); other outside agency reviews (OIG, GAO, DCAA, etc.), and an annual 2-week review (if needed). If no performance measures/targets were utilized the description of the general expectations for the success of the Objective was utilized as the baseline of the effectiveness and performance of the Contractor in meeting the corresponding Objective and in determining the score assigned. The Goal score was then computed by multiplying the numerical score by the weight of each Objective within a Goal. These values were then added together to develop an overall score for each Goal. This score was then compared to Table A to determine the overall grade for each Goal. A set of tables is provided at the end of each Performance Goal section of this document to assist in the calculation of Objective scores to the Goal score. The raw score (rounded to the nearest hundredth) from each calculation was carried through to the next stage of the calculation process. However, the raw score for Science and Technology and Management and Operation was rounded to the nearest tenth of a point for utilization in determining fee as discussed below. A standard rounding convention of x.44 and less rounds down to the nearest tenth (here, x.4), while x.45 and greater rounds up to the nearest tenth (here, x.5).

| Score | 0.1- | 0.8- | 1.1- | 1.8- | 2.1- | 2.5- | 2.8- | 3.1- | 3.5- | 3.8- | 4.1- |
|-------|------|------|------|------|------|------|------|------|------|------|------|
|       | 0.7  | 1.0  | 1.7  | 2.0  | 2.4  | 2.7  | 3.0  | 3.4  | 3.7  | 4.0  | 4.3  |
| Grade | F    | D    | C-   | С    | C+   | B-   | В    | B+   | A-   | Α    | A+   |

### Table A. FY 2010 Contractor Letter Grade Scale

Based on the evaluation of the Contractor's performance against the Goals and Objectives contained within the FY 2010 Performance Evaluation and Measurement Plan (PEMP) the scores and corresponding grades awarded for each are provided within Table B below. Specific information regarding the Contractor's performance in meeting each of the Goals and their corresponding Objectives is provided within Section II of this report.

| Science and Technology  | Letter<br>Grade | Numerical<br>Score | Objective<br>Weight | Weighted<br>Score |     |
|---|-----------------|--------------------|---------------------|-------------------|-----|
| 1.0 Provide for Efficient and Effective Mission Accomplishment  | A-              | 3.6                | 25.0%               | 0.90              |     |
| 2.0 Provide for Efficient and Effective Design, Fabrication, Construction and Operations of Research Facilities   | A-              | 3.6                | 50.0%               | 1.80              |     |
| 3.0 Provide Effective and Efficient Science and Technology Program Management   | A-              | 3.5                | 25.0%               | 0.88              |     |
|   |                 |                    |                     | Total<br>Score    | 3.6 |
| Maintenance and Operations  | Letter<br>Grade | Numerical<br>Score | Objective Weight    | Weighted Score    |     |
| 4.0 Provide Sound and Competent<br>Leadership and Stewardship of the<br>Laboratory  | B+              | 3.4                | 25.0%               | 0.85              |     |
| 5.0 Sustain Excellence and Enhance<br>Effectiveness of Integrated Safety,<br>Health, and Environmental Protection   | B+              | 3.4                | 25.0%               | 0.85              |     |
| 6.0 Deliver Efficient, Effective, and<br>Responsive Business Systems and<br>Resources that Enable the Successful<br>Achievement of the Laboratory<br>Mission(s) | B+              | 3.4                | 20.0%               | 0.68              |     |
| 7.0 Sustain Excellence in Operating,<br>Maintaining, and Renewing the Facility<br>and Infrastructure Portfolio to Meet<br>Laboratory Needs                      | A-              | 3.6                | 15.0%               | 0.54              | 14  |
| 8.0 Sustain and Enhance the<br>Effectiveness of Integrated Safeguards<br>and Security management (ISSM) and<br>Emergency Management Systems                     | B+              | 3.3                | 15.0%               | 0.50              |     |
|   |                 |                    |                     | Total<br>Score    | 3.4 |

Table B. FY 2010 Contractor Evaluation Score Calculation

Please note: In most tables, numbers are rounded for display purposes.

As such, weights may not add up to 100% in Tables B, 1.2, 1.4, 2.2, 2.4, 3.2 and 3.4.

### Performance-Based Fee Earned:

Utilizing Table B, above, the scores for each of the Science and Technology (S&T) Goals and Management and Operation (M&O) Goals were multiplied by the weight assigned and these were summed to provide an overall score for each. The percentage of the available performance-based fee that was earned by the Contractor was determined based on the overall weighted score for the S&T Goals (see Table B.) and then compared to Table C. below. The overall numerical score of the M&O Goals from Table B was then utilized to determine the final M&O fee multiplier (see Table C.), which was utilized to determine the overall amount of performance-based fee earned for FY 2010 as calculated within Table D. Based on the overall performance within the S&T and M&O Goals the Contractor is awarded \$3,337,000.00 in performance based fee for FY 2010 (See Table E).

| Overall Weighted Score from Table A | Percent S&T Fee Earned | M&O Fee Multiplier |
|-------------------------------------|------------------------|--------------------|
| 4.1 to 4.3                          | 100.00%                | 100.00%            |
| 3.8 to 4.0                          | 97.00%                 | 100.00%            |
| 3.5 to 3.7                          | 94.00%                 | 100.00%            |
| 3.1 to 3.4                          | 91.00%                 | 100.00%            |
| 2.8 to 3.0                          | 88.00%                 | 95.00%             |
| 2.5 to 2.7                          | 85.00%                 | 90.00%             |
| 2.1 to 2.4                          | 75.00%                 | 85.00%             |
| 1.8 to 2.0                          | 50.00%                 | 75.00%             |
| 1.1 to 1.7                          | 0.00%                  | 60.00%             |
| 0.8 to 1.0                          | 0.00%                  | 0.00%              |
| 0.1 to 0.7                          | 0.00%                  | 0.00%              |

Table C.-Performance Based Fee Earned Scale

| Overall Fee Determi                  | nation    |
|--------------------------------------|-----------|
| Percent S&T Fee Earned From Table C. | 94.00%    |
| M&O Fee Multiplier From Table C.     | X 100.00% |
| Overall Earned Performance-Based Fee | 94.00%    |

Table D.-Final Percentage of Performance Based Fee Earned Determination

| Earned Fee Calculation                             |                |  |  |  |  |  |  |
|--|----------------|--|--|--|--|--|--|
| Available Fee                                      | \$3,550,000.00 |  |  |  |  |  |  |
| Overall Earned Performance - Base Fee<br>(Table D) | X 94.00%       |  |  |  |  |  |  |
| Earned Fee   | \$3,337,000.00 |  |  |  |  |  |  |

Table E.-Earned Fee Calculation

### II. PERFORMANCE GOALS, OBJECTIVES, AND MEASURES/TARGETS

### Goal 1.0: Provide for Efficient and Effective Mission Accomplishment

The Contractor produces high-quality, original, and creative results that advance science and technology; demonstrates sustained scientific progress and impact; receives appropriate external recognition of accomplishments; and contributes to overall research and development goals of the Department and its customers.

The weight of this Goal is 25.0%

### High Energy Physics (HEP)

Fermilab's impact and leadership grades are dominated by the HEP proton-accelerator based research program, which is the largest research program at the Laboratory. Results from the Tevatron continued to set the direction of the field this year.

The Fermilab theory group has significant interaction with the experimentalists at the Laboratory and contributes to the overall HEP program at the Laboratory and produces work of high quality with significant contributions towards better understanding of the Standard Model, and important guidance for future studies.

The large datasets from Run II and now LHC are handled efficiently and made available for physics quickly.

### Workforce Development for Teachers and Scientists (WDTS)

The Science Education Office at Fermilab has dedicated itself to program and process improvement as evidenced by the overall quality of the intern and educator research products and by adherence to all program requirements. WDTS evaluation tools, such as abstract scores, participant surveys, and Laboratory self-assessments validate a high quality experience for participants.

The Science Education Office at the Laboratory constantly seeks opportunities with all of the other laboratories and in conjunction with headquarters to raise the visibility and awareness of the need for quality science education. The Laboratory coordinates a complex wide effort to communicate to the science education community that DOE is a national resource with formal and informal science education opportunities for K-16 students and educators.

Fermilab and Argonne collaborate to provide WDTS interns/educators with several shared experiences. This allows program participants opportunities to experience the atmosphere and culture of another laboratory, and a broader professional network upon which to build further productive career contacts.

### **Objectives**

### 1.1: Science and Technology Results Provide Meaningful Impact on the Field

### **HEP Objective Evaluation:**

Weight:

30.00%

Score:

3.6

Grade:

A-

Fermilab's impact grade is dominated by the HEP proton-accelerator based research program, which is the largest research program at the Laboratory. During FY 2010, the MiniBooNE, MINOS, D0, and CDF experiments delivered a number of high-impact results: (1) Both Tevatron experiments extended the exclusion region for Standard Model Higgs; (2) D0 found new evidence for matter-antimatter asymmetry, an effect with more than 99.9% probability of being inconsistent with known phenomena; (3) the MiniBooNE and MINOS neutrino experiments have found intriguing hints that neutrinos and anti-neutrinos

might behave differently.

The Fermilab Theory groups (HEP, Particle Astrophysics and Cosmology) continue to to produce work of high quality with significant contributions towards better understanding of the Standard Model, and important guidance for future studies. A notable innovative idea from members of the HEP Theory group in the past year is to use Tevatron data to severely constrain certain properties of dark matter. The HEP Theory group has also contributed to the feasibility study of a muon collider at Fermilab.

### WDTS Objective Evaluation:

Weight:

25.00%

Score:

3.6

Grade:

A-

The Science Education Office specifically targets undergraduate pre-service teachers and has structured an effective program that takes advantage of laboratories' unique resources such as the Laboratory's Teacher Resource Center and the Eisenhower National Clearinghouse Demonstration Site to encourage individual teacher development and motivate ongoing development as the PST moves into the classroom.

### 1.2: Provide Quality Leadership in Science and Technology

### **HEP Objective Evaluation:**

Weight:

30.00%

Score:

3.5

Grade:

Δ\_

Similar to the impact grade, the leadership grade is dominated by the proton-accelerator research program and a strong theory program. The Laboratory continues to be a leader at the proton energy frontier (Tevatron and LHC – Fermilab provides an important nucleation center for LHC analysis in the U.S.) and at the intensity frontier (ongoing and planned neutrino experiments). Many of the leadership positions in the leading proton accelerator-based experiments are held by Laboratory personnel.

The Fermilab Theory group has significant interaction with the experimentalists at the Laboratory and contributes to the overall HEP program. Many members of the group are recognized leaders in their respective areas of expertise. This is demonstrated by the many invited talks at national and international conferences, the successful workshops that attract physicists worldwide to go to Fermilab, and the prestigious prizes and awards that some have received for their contributions to the field. Members of the Fermilab Theory group have mentored many postdocs who later became leaders in the field.

#### WDTS Objective Evaluation:

Weight:

30.00%

Score:

3.5

Grade:

A-

The Science Education Office consists of a highly motivated, well-managed team that works continually to integrate science education and workforce development into the research mission of the laboratory.

### 1.3: Provide and Sustain Outputs that Advance Program Objectives & Goals

### **HEP Objective Evaluation:**

Weight:

20.00%

Score:

3.6

Grade:

A-

The research output from the Laboratory is excellent as evidenced by the many talks at international conferences and the new results delivered on neutrinos, collider physics, particle theory in FY 2010.

### WDTS Objective Evaluation:

Weight:

30.00%

Score:

3.6

Grade:

A-

The Laboratory makes every effort to maintain an alumni connection with the interns/educators in their programs in an effort to develop/encourage lifelong learners in high-energy physics. The Science Education Office is always willing to help current and former interns by providing access to research and accompanying teaching materials and by supporting efforts and developing materials to teach physics to middle and high school students.

### 1.4: Provide for Effective Delivery of Products

### **HEP Objective Evaluation:**

Weight:

20.00%

Score:

3.5

Grade:

A-

The delivery of proton research results during 2010 has met or exceeded expectations. The Tevatron has delivered an ever increasing amount of data, which will be graded under goal 2, and the Laboratory has organized with the collaborations an efficient reconstruction and analysis effort that has kept physical results flowing in a timely way.

The US Compact Muon Solenoid (CMS) Tier 1 computing center is the only Tier 1 center in the world to meet the Worldwide Large Hadron Collider (LHC) Computing Grid availability metric and is recognized as the highest performing Tier 1 center in the world.

### WDTS Objective Evaluation:

Weight:

15.00%

Score:

3.8

Grade:

A-

The Laboratory is among the best-in-class among the laboratories in the "informal education" field with activities throughout the year at the laboratory and on their web page where complicated science concepts about beam physics and accelerator physics are taught through multiple methods including worksheets, puzzles, games, reference material, and hands-on activities. The Laboratory houses extensive science education materials and uses multiple avenues to deliver the greatest learning impact to students and educators alike.

| Science Program Office  | Letter<br>Grade | Numerical<br>Score | Objective<br>Weight | Weighted Score | Overall<br>Score |
|---|-----------------|--------------------|---------------------|----------------|------------------|
| High Energy Physics   |                 |                    |                     |                |                  |
| 1.1 Science and Technology Results Provide Meaningful Impact on the Field | A-              | 3.6                | 30.0%               | 1.08           |                  |
| 1.2 Provide Quality Leadership in Science and Technology                  | A-              | 3.5                | 30.0%               | 1.05           |                  |
| 1.3 Provide and Sustain Outputs that Advance Program Objectives & Goals   | A-              | 3.6                | 20.0%               | 0.72           |                  |
| 1.4 Provide for Effective Delivery of Products                            | A-              | 3.5                | 20.0%               | 0.70           |                  |
|   |                 |                    |                     | Total          | 3.55             |

| Workforce Development for<br>Teachers and Scientists                          |    |     |       |       |      |
|---|----|-----|-------|-------|------|
| Science and Technology Results     Provide Meaningful Impact on the     Field | A- | 3.6 | 25.0% | 0.90  |      |
| Provide Quality Leadership in Science and Technology                          | A- | 3.5 | 30.0% | 1.05  |      |
| 1.3 Provide and Sustain Outputs that Advance Program Objectives & Goals       | A- | 3.6 | 30.0% | 1.08  |      |
| 1.4 Provide for Effective Delivery of Products                                | Α  | 3.8 | 15.0% | 0.57  |      |
|   |    |     |       | Total | 3.60 |

Table 1.1 - 1.0 SC Program Office Performance Goal Score Development

| Science Program Office                            | Letter<br>Grade | Numerical<br>Score | Weight | Weighted<br>Score | Overall<br>Score |
|---|-----------------|--------------------|--------|-------------------|------------------|
| High Energy Physics                               | A-              | 3.6                | 99.9%  | 3.60              |                  |
| Workforce Development for Teachers and Scientists | A-              | 3.6                | 0.1%   | 0.00              |                  |
|   |                 |                    |        | Total             | 3.60             |

Table 1.2 – SC Program Office Overall Performance Goal Score Development

| HQ Program Office | Letter<br>Grade | Numerical<br>Score | Weight | Weighted<br>Score | Overall<br>Score |
|-------------------|-----------------|--------------------|--------|-------------------|------------------|
| Office Of Science | A-              | 3.6                | 100.0% | 3.60              |                  |
|                   |                 |                    |        | Total             | 3.60             |

Table 1.3 – Overall Performance Goal Score Development

| Score | 0.1- | 0.8- | 1.1- | 1.8- | 2.1- | 2.5- | 2.8- | 3.1- | 3.5- | 3.8- | 4.1- |
|-------|------|------|------|------|------|------|------|------|------|------|------|
|       | 0.7  | 1.0  | 1.7  | 2.0  | 2.4  | 2.7  | 3.0  | 3.4  | 3.7  | 4.0  | 4.3  |
| Grade | F    | D    | C-   | С    | C+   | B-   | В    | B+   | A-   | Α    | A+   |

Table 1.4 - 1.0 Goal Final Letter Grade

Goal 2.0: Provide for Efficient and Effective Design, Fabrication, Construction and Operations of Research Facilities

The Contractor provides effective and efficient strategic planning; fabrication, construction and/or operations of Laboratory research facilities; and are responsive to the user community.

The weight of this Goal is 50.0%

### High Energy Physics (HEP)

The Tevatron and NuMI again exceeded the performance goals that were set by the Office of Science and the previous year's performance by significant margins. Ongoing projects are doing well including MINERvA which was completed early and under budget. New projects have seen some growing pains as the Laboratory attempts to properly staff them.

### **Objectives**

2.1: Provide Effective Facility Design(s) as Required to Support Laboratory Programs (i.e., activities leading up to CD-2)

### **HEP Objective Evaluation:**

Weight:

25.00%

Score:

2.8

Grade:

В

There are three projects in the pre-CD-2 stage: Long Baseline Neutrino Experiment (LBNE), Muon to Electron Conversion Experiment (Mu2e), and MicroBooNE. LBNE is behind schedule for CD-1. To its credit, the Laboratory discovered this and informed the Office of High Energy Physics. However, one of the reasons for the delay is inadequate staffing on the project. On MicroBooNE the Laboratory is struggling with finalizing a location for the experiment, which is needed to complete the baseline. The Mu2e project is also behind its planned schedule for CD-1.

2.2: Provide for the Effective and Efficient Construction of Facilities and/or Fabrication of Components (execution phase, post CD-2 to CD-4)

A-

### **HEP Objective Evaluation:**

Weight:

35.00%

Score:

baseline.

3.7

Grade:

The MINERvA project was completed 3 months early and returned \$1,500,000 to the program in unspent contingency funds. The NOvA project is progressing well and is within its cost and schedule baseline. Major procurements using ARRA funding have been made at lower than estimated cost. Major risks are being retired. The Dark Energy Survey (DES) project is also proceeding on schedule and within its cost

2.3: Provide Efficient and Effective Operation of Facilities

#### **HEP Objective Evaluation:**

Weight:

40.00%

Score:

4.0

Grade:

Α

The Tevatron and NuMI again exceeded the performance goals that were set by the Office of Science and the previous year's performance by significant margins. The Tevatron delivered 2.48 inverse femtobarns of luminosity in FY 2010 compared to 1.94 inverse femtobarns in FY 2009 and NuMI delivered 3.2E20 protons on target in FY 2010 compared to 2.2E20 protons on target in FY 2009. These improvements were due to improved reliability and efficiency. There were no recent upgrades to improve peak performance.

### 2.4: Utilization of Facility to Grow and Support Laboratory's Research Base and External User Community

### **HEP Objective Evaluation:**

Weight:

0.00%

Score:

N/A

Grade:

N/A

| Science Program Office   | Letter<br>Grade | Numerical<br>Score | Objective<br>Weight | Weighted<br>Score | Overall<br>Score |
|--|-----------------|--------------------|---------------------|-------------------|------------------|
| High Energy Physics  |                 |                    |                     |                   |                  |
| 2.1 Provide Effective Facility Design(s) as Required to Support Laboratory Programs (i.e., activitie   | В               | 2.8                | 25.0%               | 0.70              |                  |
| 2.2 Provide for the Effective and Efficient Construction of Facilities and/or Fabrication of Componets | A-              | 3.7                | 35.0%               | 1.30              |                  |
| 2.3 Provide Efficient and Effective Operation of Facilities  | A               | 4.0                | 40.0%               | 1.60              |                  |
| 2.4 Utilization of Facility to Grow and Support Laboratory's Research Base and External User Community |                 |                    | 0.0%                | 0.00              |                  |
|  |                 |                    |                     | Total             | 3.60             |

Table 2.1 - 2.0 SC Program Office Performance Goal Score Development

| Science Program Office                            | Letter<br>Grade | Numerical<br>Score | Weight | Weighted Score | Overall<br>Score |
|---|-----------------|--------------------|--------|----------------|------------------|
| High Energy Physics                               | A-              | 3.6                | 100.0% | 3.60           |                  |
| Workforce Development for Teachers and Scientists |                 |                    | 0.0%   |                |                  |
|   |                 |                    |        | Total          | 3.60             |

Table 2.2 – SC Program Office Overall Performance Goal Score Development

| HQ Program Office | Letter<br>Grade | Numerical<br>Score | Weight | Weighted<br>Score | Overall<br>Score |
|-------------------|-----------------|--------------------|--------|-------------------|------------------|
| Office Of Science | A-              | 3.6                | 100.0% | 3.60              |                  |
|                   |                 |                    |        | Total             | 3.60             |

Table 2.3 - Overall Performance Goal Score Development

| Score | 0.1- | 0.8- | 1.1- | 1.8- | 2.1- | 2.5- | 2.8- | 3.1- | 3.5- | 3.8- | 4.1- |
|-------|------|------|------|------|------|------|------|------|------|------|------|
|       | 0.7  | 1.0  | 1.7  | 2.0  | 2.4  | 2.7  | 3.0  | 3.4  | 3.7  | 4.0  | 4.3  |
| Grade | F    | D    | C-   | С    | C+   | B-   | В    | B+   | A-   | Α    | A+   |

Table 2.4 - 2.0 Goal Final Letter Grade

### Goal 3.0: Provide Effective and Efficient Science and Technology Program Management

The Contractor provides effective program vision and leadership; strategic planning and development of initiatives; recruits and retains a quality scientific workforce; and provides outstanding research processes, which improve research productivity.

The weight of this Goal is 25.0%

### High Energy Physics (HEP)

Fermilab continues to steward the Intensity Frontier initiatives and plays a major role on the energy frontier as host Laboratory for CMS. The Laboratory serves as major intellectual and center for CMS through the Remote Operations Center and the LHC Physics Center.

### Workforce Development for Teachers and Scientists (WDTS)

The Science Education Office is dedicated to providing quality; inquiry based science education to the broader learning community and uses multiple strategies to ensure maximum learning impact. They provide education in both science content and science pedagogy through mentor intensive research experiences; opportunities for collaboration with other interns and teachers; on site science seminars; and informal, engaging, "fun" learning activities.

The education staff is creative, dedicated and disciplined and maintains an interactive relationship with current and previous program participants thereby extending the mentor relationship to promote ongoing learning. They are persistent in their efforts to include participants from diverse populations in WDTS supported programs.

The Science Education Office has done an excellent job of advancing the mentor culture at Fermilab. They host mentor workshops, they select Principal Investigator's who have the commitment to mentor the next generation of scientists, they ensure the interns/educators have the technical understanding to be contributors to the research, and they ensure that both PIs and participants meet their commitments and produce quality deliverables.

### **Objectives**

3.1: Provide Effective and Efficient Stewardship of Scientific Capabilities and Program Vision

### **HEP Objective Evaluation:**

Weight:

40.00%

Score:

3.6

Grade:

A-

Fermilab continues to steward the Intensity Frontier initiatives and plays a major role on the energy frontier as host Laboratory for CMS. They serve as major intellectual and center for CMS through the Remote Operations Center and the LHC Physics Center.

### WDTS Objective Evaluation:

Weight:

20.00%

Score:

3.6

Grade:

A-

The laboratory education office inspires interns/educators by showing them the rewards and satisfaction inherent in pursuing science education where knowledge of and scientific pursuits can lead to the technical advances that yield great benefits.

### 3.2: Provide Effective and Efficient Science and Technology Project/Program Planning and Management

### **HEP Objective Evaluation:**

Weight:

40.00%

Score:

3.3

Grade:

B+

The Laboratory generally has effective processes for managing the Laboratory. Laboratory management has a detailed understanding of the resources being used and the manpower available, however frequently have trouble mapping this onto HEP budget categories. In addition, it is not clear that budget priorities and constraints are clearly communicated to group leaders and lower level management, resulting in some confusion.

### WDTS Objective Evaluation:

Weight:

40.00%

Score:

3.6

Grade:

A-

The Science Education Office develops and generously shares with others laboratories best practices for communicating and equipping educators to become more effective and creative teachers.

### 3.3: Provide Efficient and Effective Communications and Responsiveness to Customer Needs

### **HEP Objective Evaluation:**

Weight:

20.00%

Score:

3.5

Grade:

A-

Communication between the Laboratory and headquarters occurs on multiple levels and is generally effective. Requests for information are answered promptly.

### WDTS Objective Evaluation:

Weight:

40.00%

Score:

3.5

Grade:

Α-

The Science Education Office is responsive to the HQ program office and is an excellent collaborator in developing best practices for overall program improvement where participant and PI's interest are equally served to collective interest.

| Science Program Office  | Letter<br>Grade | Numerical<br>Score | Objective<br>Weight | Weighted<br>Score | Overall<br>Score |
|---|-----------------|--------------------|---------------------|-------------------|------------------|
| High Energy Physics   |                 |                    |                     |                   |                  |
| 3.1 Provide Effective and Efficient<br>Stewardship of Scientific Capabilities<br>and Program Vision | A-              | 3.6                | 40.0%               | 1.44              |                  |
| 3.2 Provide Effective and Efficient Science and Technology Project/Program Planning and Management  | B+              | 3.3                | 40.0%               | 1.32              |                  |
| 3.3 Provide Efficient and Effective<br>Communications and Responsiveness<br>to Customer Needs       | A-              | 3.5                | 20.0%               | 0.70              |                  |
|   |                 |                    |                     | Total             | 3.46             |
| Workforce Development for<br>Teachers and Scientists  |                 |                    |                     |                   |                  |
| 3.1 Provide Effective and Efficient<br>Stewardship of Scientific Capabilities<br>and Program Vision | A-              | 3.6                | 20.0%               | 0.72              |                  |
| 3.2 Provide Effective and Efficient Science and Technology Project/Program Planning and Management  | A-              | 3.6                | 40.0%               | 1.44              |                  |
| 3.3 Provide Efficient and Effective<br>Communications and Responsiveness<br>to Customer Needs       | A-              | 3.5                | 40.0%               | 1.40              |                  |
|   |                 |                    |                     | Total             | 3.56             |

Table 3.1 - 3.0 SC Program Office Performance Goal Score Development

| Science Program Office                            | Letter<br>Grade | Numerical<br>Score | Weight | Weighted Score | Overall<br>Score |
|---|-----------------|--------------------|--------|----------------|------------------|
| High Energy Physics                               | A-              | 3.5                | 100.0% | 3.50           | 7                |
| Workforce Development for Teachers and Scientists | A-              | 3.6                | 0.0%   | 0.00           |                  |
|   |                 |                    |        | Total          | 3.50             |

Table 3.2 – SC Program Office Overall Performance Goal Score Development

| HQ Program Office | Letter<br>Grade | Numerical<br>Score | Weight | Weighted<br>Score | Overall<br>Score |
|-------------------|-----------------|--------------------|--------|-------------------|------------------|
| Office Of Science | A-              | 3.5                | 100.0% | 3.50              |                  |
|                   |                 |                    |        | Total             | 3.50             |

Table 3.3 - Overall Performance Goal Score Development

| Score | 0.1- | 0.8- | 1.1- | 1.8- | 2.1- | 2.5- | 2.8- | 3.1- | 3.5- | 3.8- | 4.1- |
|-------|------|------|------|------|------|------|------|------|------|------|------|
|       | 0.7  | 1.0  | 1.7  | 2.0  | 2.4  | 2.7  | 3.0  | 3.4  | 3.7  | 4.0  | 4.3  |

| Grade | F | D | C- | C | C+ | B- | В | B+ | Δ- | A | A+ |       |
|-------|---|---|----|---|----|----|---|----|----|---|----|-------|
|       | - |   |    | _ |    | _  |   |    |    |   | 7. | 00000 |

### Table 3.4 – 3.0 Goal Final Letter Grade Goal 4.0: Provide Sound and Competent Leadership and Stewardship of the Laboratory

This Goal evaluates the Contractor Leadership capabilities in leading the direction of the overall Laboratory, the responsiveness of the Contractor to issues and opportunities for continuous improvement, and corporate office involvement/commitment to the overall success of the Laboratory.

The weight of this Goal is 25.0%

The Laboratory has met expectations contained within Goal 4.0. All notable outcomes were achieved. The Laboratory has provided excellent leadership and stewardship of the HEP Program. Outstanding collaborations have been built and strong communications and outreach programs are evident. Management and Operation of the Laboratory has been exemplary and the Contractor organization has demonstrated added value and met corporate commitments.

### 4.1: Leadership and Stewardship of the Laboratory

Weight:

33.00%

Score:

3.6

Grade:

A-

Notable Outcome: Laboratory leadership will develop a strategic plan for the future scientific and technical activities of the Laboratory, which aligns with Office of Science and Department goals, and a detailed strategy for executing the plan during the next 2-5 years.

This notable outcome was met. The Laboratory developed a strategic plan for the future scientific and technical activities of the Laboratory, which aligns with SC and DOE goals, and a detailed strategy for executing the plan during the next 2-5 years. The plan has a phased approach with strategic decision points, each of which has the ability to deliver outstanding science. The strategic plan was approved by SC in June 2010.

Leadership. Fermilab is playing a leadership role in determining the directions of the national program in high energy physics. The Laboratory has worked hard to implement the Intensity Frontier of HEP strategic plan develop by P5 and in leading the Long Baseline Neutrino Experiment Project and the Muon to Electron Conversion Experiment. In addition, the Laboratory is developing the physics case for a new high intensity proton source (Project X) that will expand opportunities on the Intensity Frontier. The Laboratory has already developed a nationwide collaboration for Project X and is reaching out to involve institutions in India. This effort benefits from the well-developed collaboration of universities, national laboratories, and industry to advance superconducting RF technology. Finally, during FY 2010, The Laboratory led the development of a multi-institutional proposal to do R&D on the feasibility of a muon collider facility.

<u>Strategic Partnerships</u>. Under the leadership of FRA, the Laboratory leadership has effectively established new and strengthened existing strategic partnerships in support of its and the SC HEP Program's long-range plans. International relationships, which will be critical to the success of any large future efforts, are being regularly nurtured by the Laboratory. As a result, Fermilab has maintained its excellent partnership with CERN as it serves as U.S. host Laboratory for CMS and the host Laboratory for the LHC Accelerator Research Program. Strong collaborations also have been developed with the countries of Japan, India, and China.

Within the U.S., Fermilab has maintained and continued improving its partnerships with Argonne National Laboratory (ANL) in accelerator and detector development, cosmological computation, and accelerator

education programs. The Laboratory is also appropriately maintaining partnerships with ANL, Brookhaven National Laboratory, Lawrence Berkeley National Laboratory, Los Alamos National Laboratory, the SLAC National Accelerator Laboratory, Thomas Jefferson National Accelerator Facility, and university groups in the R&D program to benefit the Laboratory's vision and plan.

<u>Communications and Outreach</u>. Communication and outreach activities continue as strengths of the Laboratory under FRA's management, and Fermilab's policy of transparency in communications serves the Laboratory and the SC HEP Program well. *Fermilab Today* and *Symmetry* continue to be top-notch publications for a wide variety of venues, including the local community and policy makers, and keep stakeholders informed about topics and developments in the HEP community. The Laboratory also works closely with CERN to communicate information about the LHC, continues to take a leadership role in the InterAction collaboration, and has supported the development of significant national HEP program efforts such as the Accelerators for America's Future.

In addition, during FY 2010, the Laboratory created a new Community Advisory Board to nurture its' relationship with the local community and to solicit meaningful feedback on a variety of issues affecting current operations and the many, large projects planned at the site. This is Fermilab's third such board to be established and was heavily oversubscribed by volunteers from neighboring communities.

### 4.2: Management and Operation of the Laboratory

Weight:

33.00%

Score:

3.3

Grade:

B+

Notable Outcome: Laboratory Leadership will make significant progress in defining and implementing its contractor assurance system. It is expected that a collaborative and uniform approach to this issue among all contractors will be evident.

This notable outcome was met. Fermilab and FRA made significant progress in developing a plan for a robust contractor assurance system (CAS), and the Laboratory has completed a number of its CAS implementation targets, including a Root Cause Analysis Training and Graded Approach, a Suspect/Counterfeit Item Program, a Lessons Learned Program, a Corrective and Preventive Action Procedure, a Management (Self) Assessment Procedure, and a Science As-Is Assessment. Significant advancements also have been made in the accelerator safety area through creation of the Fermilab Safety Assessment and Shielding Review Subcommittees. Finally, senior Laboratory and FRA representatives have participated in other laboratory CAS peer reviews.

Facility Operations. The Tevatron had a record year for recorded luminosity with a ~25% gain over FY 2009, and the NuMI performance was a ~30% improvement over FY 2009. This achievement was due to careful attention to detail in the operations. High efficiencies within the accelerator complex and low downtime allowed for very good integration of luminosity.

Managerial and Operational Improvements. During FY 2010, the Laboratory leadership implemented improvements for managerial and operational issues across Fermilab. These include: publishing a new, comprehensive Procedures for Researchers (PFX) document designed to improve users' ability to easily and productively use laboratory facilities; publishing an Engineering Manual designed to improve quality of work through proper execution and documentation of engineering projects; continuing to implement a reorganization of its Computing Division to effect performance breakthroughs and efficiencies; proactively completing EVMS Certification during FY 2010 by devoting resources to finalize implementation of a Time and Labor System; and filling management team positions and building teams for the MicroBooNE, Project X, Mu2e, and LBNE projects.

<u>Safety</u>. A successful safety program is in place at the Laboratory, as evidenced by the achievement of four National Safety Council awards (i.e., National Safety Council Million Work Hours Award for the Technical Division for no DART cases, two National Safety Council Perfect Record Awards for the

Business and Finance Sections for No Days Away from Work, and a National Safety Council Expert Driver Award for Business Services drivers for no at-fault vehicle accidents) during the performance period. In addition to these awards, Fermilab had very good safety statistics in FY 2010 and achieved reregistrations for ISO-14001 and OHSAS 18001.

<u>Communications and Responsiveness</u>. The Laboratory's communications with FSO and the HEP program office at SC Headquarters are excellent. The Laboratory leadership has kept the HEP program well informed of issues at the Laboratory as they arose, and FRA has invited DOE representatives to its board meetings.

#### 4.3: Contractor Value-added

Weight:

34.00%

Score:

3.3

Grade:

B+

Notable Outcome: The contractor will fill all key leadership positions at the Laboratory in a timely manner.

This notable outcome was met. FRA was instrumental in reappointing the Laboratory Director and in hiring Stuart Henderson as Fermilab's Associate Director for Accelerators.

<u>Delivery of Contractual Commitments</u>. FRA has delivered on contractual commitments that will enhance the Laboratory. For example, FRA has strategically provided for increased numbers of joint appointments, especially with local universities, to strengthen the Laboratory's HEP program; new joint appointments were made in FY 2010 with Virginia and Syracuse, which exceed FRA's original contractual commitments. FRA has also provided for joint research and education, scholarship and tuition support, and supported the Strategic Laboratory Leadership training program, which trains promising scientific and operational managers from Fermilab and Argonne National Laboratory (ANL) in conjunction with the University of Chicago's Graduate School of Business. The Program has continued to grow with the added participation of other national laboratories, and FRA's efforts in support of the Program have far exceeded its original commitments.

Oversight. FRA provided oversight for the Laboratory by commissioning assessments of the Laboratory's scientific programs (completed in March 2010) and administration and operations support (completed in August 2010). These reviews focused on key issues raised by DOE through performance feedback. For example, the FRA Visiting Committee review of Fermilab Administration and Operations Support reviewed the quality and effectiveness of Fermilab's administrative organizations and operations support systems, and was structured as foundation for future contractor assurance efforts. While no findings were identified, both FRA Visiting Committees provided quality recommendations for improvement.

Laboratory Collaboration Council. Established in 2007, the Laboratory and ANL Laboratory Collaboration Council has continued to stimulate joint efforts between the two laboratories in a variety of areas. The majority of operational improvements have been in the sharing of best practices and expertise in such areas as safety and travel; the Contractor also draws upon experts from both of the laboratories to serve as independent reviewers on key operational assessments and the laboratories have discussed instituting a number of potential cost-cutting collaborations.

| Element  | Letter<br>Grade | Numerical<br>Score | Objective<br>Weight | Weighted<br>Score | Overall<br>Score |
|--|-----------------|--------------------|---------------------|-------------------|------------------|
| Goal 4.0: Provide Sound and<br>Competent Leadership and<br>Stewardship of the Laboratory |                 |                    |                     |                   |                  |
| 4.1: Leadership and Stewardship of the Laboratory  | A-              | 3.6                | 33.0%               | 1.19              |                  |
| 4.2: Management and Operation of the Laboratory  | B+              | 3.3                | 33.0%               | 1.09              |                  |
| 4.3: Contractor Value-added  | B+              | 3.3                | 34.0%               | 1.12              |                  |
|  |                 |                    |                     | Total             | 3.40             |

Table 4.1 - 4.0 SC Program Office Performance Goal Score Development

| Score | 0.1- | 0.8- | 1.1- | 1.8- | 2.1- | 2.5- | 2.8- | 3.1- | 3.5- | 3.8- | 4.1- |
|-------|------|------|------|------|------|------|------|------|------|------|------|
|       | 0.7  | 1.0  | 1.7  | 2.0  | 2.4  | 2.7  | 3.0  | 3.4  | 3.7  | 4.0  | 4.3  |
| Grade | F    | D    | C-   | С    | C+   | B-   | В    | B+   | A-   | Α    | A+   |

Table 4.2 - 4.0 Goal Final Letter Grade

Goal 5.0: Sustain Excellence and Enhance Effectiveness of Integrated Safety, Health, and Environmental Protection

This Goal evaluates the Contractor overall success in deploying, implementing, and improving integrated ES&H systems that efficiently and effectively support the mission(s) of the Laboratory.

The weight of this Goal is 25.0%

The Laboratory's Integrated Safety, Health, and Environmental Protection Program has met expectations contained within Goal 5.0. There is a strong safety culture at the Laboratory as evidenced by ISO 14001/OHSAS18001 Re-Certification. The Laboratory continues to be a leader within the SC accelerator safety community, contributes to the update of the DOE Accelerator Safety Order and Guide, and met or exceeded all recommendations from the SC Accelerator Safety Review. The Laboratory has significantly reduced injury rates from FY 2009 and does an excellent job of safety communication and limiting radiation exposure.

#### 5.1: Provide a Work Environment that Protects Workers and the Environment

Weight:

40.00%

Score:

3.4

Grade:

B+

Notable Outcome: FNAL will maintain ISO 14001 & OHSAS 18001 Registrations, as evidenced by successful completion of third-party surveillance audits conducted roughly every six months.

The Laboratory Re-registration audit was June 7-11, 2010; and was successfully re-registered for both ISO 14001 and OHSAS 18001. The auditors were complimentary of the Laboratory's many new programs and initiatives as well as the speed of progress with regard to the continuous improvement over the past year. The registrars were impressed with the Fermilab ES&H culture and transparency and their

assessment noted no new findings. They stated that: "The Integrated Management system has been improved over the last 3 years." ISO/OHSAS Audit Report, Strengths and Positive Practices noted by the audit team included the alignment of EH&S Plans to Fermilab ES&H Performance Goals and Notable Outcomes; the flexibility and effectiveness of the job hazard analysis process; management's commitment to communication cultural changes; Human Performance Improvement implementation; Lessons Learned Database; and the Continual Improvement Database.

The Laboratory's evaluation demonstrates that although Fermilab was not quite able to meet DART/TRC injury numerical targets in its performance plan, the Laboratory has benefited from improvement initiatives such as the Human Performance Improvement (HPI) training, HPI analysis to evaluate the workplace, and the recent Take Five for Goal Zero campaign. Two clear benefits appear to have emerged from these efforts within the past year: 1) injuries have decreased by nearly half; and 2) the safety culture has strengthened.

The Laboratory continually seeks input from its peer laboratories in seeking ways to reduce injuries and improve the safety culture of the Laboratory. The Laboratory has benchmarked ES&H programs at other DOE Laboratories and has continued to implement initiatives that appear to be having positive effects on the Fermilab ES&H Program. Other improvements that have been made to strengthen the ES&H Program include the implementation of frESHTRK, an oversight information system, to encourage consistent reporting of ES&H information for tracking and analysis; the development of a centralized sitewide Lessons Learned program to better capture this information to share and analyze across the Laboratory; and focused efforts on Traffic Safety due to the number of on-site accidents. The Traffic Safety Subcommittee has been instrumental in providing Laboratory management the necessary information that has resulted in a new policy/procedure on Traffic Safety and improved enforcement of traffic safety rules.

The Laboratory has put a great deal of effort into assuring employee radiation exposures are as low as possible. The Accelerator Division and ES&H Section scrutinize work documents since beam intensities needed for high energy programs are activating components and creating more radiological areas to manage during shutdowns. The results of these reviews demonstrated that the actual doses received were lower than the pre-job estimates. The annual ALARA summaries transmitted to DOE in March 2010 demonstrate the Laboratory's efforts to reduce dose to personnel.

The Laboratory has done an excellent job in assuring effective communication of ES&H information. There are numerous avenues utilized to communicate such as the daily Laboratory-wide newsletter, FermilabToday, weekly management meetings, and the Laboratory Director's monthly Division/Section/Center walkthroughs. These mechanisms provide employees with the necessary level of information and also provide a means for employees to share their ES&H input. Some newer communication tools have also been implemented including The Porcelain Press, a one page newsletter that is posted in the restrooms throughout the site, and the Take 5 for Goal 0 campaign which serves as a communication tool to promote ES&H. Take 5 challenges and contests help to keep the employees involved and the campaign fresh. The goal of these initiatives is reduced frequency and severity of injuries and an improved overall safety culture.

The Laboratory has been very proactive on the sustainability front in the implementation of Executive Order 13514. Environmental officers in all divisions and sections meet on a monthly basis and discuss ways to promote sustainability and get the "green message" back to their respective management and coworkers. The Laboratory has ongoing programs that promote recycling and the purchasing of environmentally preferable products. As part of a Greenhouse Gas (GHG) Site Assist visit, the Laboratory provided feedback regarding GHG data collection and reporting to DOE Headquarters staff. This feedback was taken back to DOE Headquarters for distribution to sites and offices nationwide.

### 5.2: Provide Efficient and Effective Implementation of Integrated Safety, Health and Environment Management

Weight:

40.00%

Score:

3.5

Grade:

A-

Notable Outcome: FNAL will meet planned FY2010 milestones contained in the Corrective Action Plan that is being developed in response to the March 2009 Accelerator Safety Review.

During FY 2010, the Laboratory met all milestones contained in the Corrective Action Plan (CAP) that has been developed in response to the March 2009 DOE Accelerator Safety Review. The Fermilab ES&H Manual (FESHM) Chapter 2010, a Work Smart Standard that implements the DOE O 420.2B, "Safety of Accelerator Facilities", was revised and submitted to DOE ahead of schedule. In addition, an outline/template for the update of the site wide Fermilab Safety Assessment Document (SAD) was submitted to DOE ahead of the CAP due date of June 1, 2010. This support document serves as the framework upon which the integrated Fermilab SAD system will be built. It includes proposed schedules for developing SAD modules during the next few years. The Accelerator Safety Envelope (ASE) for the Fermilab accelerator was revised and submitted to DOE for approval ahead of the CAP due date of March 1, 2010. Finally, the hazard analysis document for the Vertical Cavity Test Facility was also completed ahead of the scheduled due date.

The Laboratory continues the work on developing the SAD system consistent with the approved outline and schedule. An immediate benefit of the new format is that all the Laboratory's site descriptive material is being consolidated. The new SAD document system will make it much easier to avoid inconsistencies and unnecessary repetitive verbiage. The Laboratory's ES&H Committee has added two subcommittees related to this effort; the Shielding Assessment Review and Safety Assessment Document Subcommittees. These committees are serving to foster Laboratory-wide involvement in this important process.

The Laboratory has implemented many new processes and initiatives to strengthen their Integrated Environment, Safety, and Health Management (IESHM) Program. The ISO 14001/OHSAS 18001 process identified many strengths associated with improvements made to the Fermilab IESHM. The Laboratory has made great strides in the communication of ES&H information as well as the sharing of lessons learned. Additionally, they have made changes to the ES&H training system to increase the efficiency of employee participation. The new processes and systems that will aid in improving the ES&H Program. The ES&H Section Construction Audit Procedure is a procedure to follow when construction audits are performed. The impact of this tool has been increased communication and clarity of roles and responsibilities. The standardization of the Fermilab ES&H Committee (FESHCom) and the other eleven subcommittee charters will enable the Laboratory to advance ES&H programs and help to ensure flow down to all D/S/C and subcontractors. These charters now explicitly include tracking and trending of issues and an annual assessment of the work done by the committee. This information is rolled up into the Laboratory-wide self assessment and enables better identification of strengths and weaknesses in the overall ES&H program. The charters also help to clarify the roles and responsibilities of the committee members.

The Laboratory's Environmental Management System (EMS) was reviewed by DOE in FY 2010 and found to be effectively implemented. The Laboratory continues to integrate environmental aspects into all phases of work. This has been especially demonstrated through the Hazard Analysis process, NEPA review process, and the numerous articles and communiques relating to energy conservation and recycling efforts. As part of the Senior Safety Officer (SSO) subcommittee, eight ad-hoc groups have been formed to work on issues within specific ES&H disciplines. These groups are enabling the improvement of ES&H policies and procedures and include: Human Performance Improvement, Building Management Program, Root Cause Analysis Procedure, Fall Protection, and Aerial Lift Training. Human Performance Improvement (HPI) provides an effective method to prevent and evaluate unwanted safety outcomes caused by human error. The HPI Training has been particularly effective in reducing

recordable injuries with those Fermilab organizations that have had greater numbers of recordable accidents in the past.

The Laboratory has actively participated in the DOE's Energy Facility Contractor Group (EFCOG). The Laboratory has recognized the value of participating in these meetings in the hope of gaining information to resolve ES&H issues that other sites may have already addressed. Laboratory staff have been assigned duties to participate in specific meetings within their respective areas of expertise.

### 5.3: Provide Efficient and Effective Waste Management, Minimization, and Pollution Prevention

Weight:

20.00%

Score:

3.2

Grade:

B+

Notable Outcome: In support of the Federal Electronics Challenge and the requirement of Executive Order 13423, FNAL will reduce the environmental impact of using personal computers (including laptops), monitors and printers. During FY 2010 FNAL will establish formal policies and procedures on energy efficient computing. Procurements of computers for scientific programming will include energy efficiency in the evaluation criteria for the procurement of computers for scientific programming. A baseline assessment of the Laboratory's EPEAT system performance will be conducted by June 30, 2010.

The Laboratory continues to be a leader in the Federal Electronics Challenge, again earning the bronze award. The Laboratory has set up formal policies and procedures for energy efficient computing and life cycle computing which were posted to the Computing Division's website in February 2010. In addition, the Director's Policy has been modified to include a section covering environmentally responsible electronics stewardship.

Fermilab's current power configuration settings are addressed as part of their configuration requirements for Windows, Linux and MacOS. For each of the three systems used to support desktop computing, a baseline configuration indicates whether a setting is mandatory or recommended. With regards to power management the Laboratory is actively pursuing the following initiatives:

- The testing of power management features under Windows7 has been successfully completed. Three hundred and thirty-nine Windows7 desktop machines have been deployed on site and will have their power management settings enabled after anti-virus and patching testing is completed. During FY 2011 the Laboratory will award a contract to upgrade all Windows desktop machines to Windows7. That will provide the capability to deploy power management settings to all the Windows machines.
- During FY 2010 a product was deployed to all Mac and Linux desktop machines to allow configuration settings to be examined. It has been a recommended part of both MacOS and Linux configurations for several years to enable power saving settings. The program will allow the Laboratory to examine those settings to understand how widely they are deployed. The Laboratory Procurement Department is required to purchase only EPEAT registered personal computers. A variance form is now required for all purchases where the user is unable to use an energy compliant PC. Prior to this requirement being in place, 88% of purchases for PC's were EPEAT registered. As of February 2010, that number had increased to 97%. The Laboratory continues to achieve progress in the area of pollution prevention and waste minimization. They have successfully communicated such topics as recycling, water usage, and energy conservation through various avenues. The periodic ES&H Health Fairs, Fermilab Today, the Porcelain Press, and the various other Division/Section communiques and newsletters are examples. Opportunities to reduce hazardous waste and maximize recycling and reuse are achieved through numerous mechanisms. These include design reviews, NEPA reviews, the Operational Readiness Clearance Process, and Environmental Monitoring Programs. Efforts to minimize waste have resulted in the Laboratory diverting approximately 80% non-hazardous solid waste towards recycling, exceeding DOE's goal of 50% diversion. To minimize Construction and

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Demolition (C&D) waste, the Laboratory makes a number of recycling dumpsters available throughout the facility for use by contractors who generate small (<1 cu. yd.) amounts of waste. 100% of this waste is transported to a recycling vendor, who provides reports on actual recycling by material. After segregation of the C&D waste by the recycling vendor, the diversion rate for FY 2010 was ~65%.

In addition to the above Notable Outcome, the Laboratory's NEPA Coordinator has made great strides in enforcing the NEPA review process for new projects. In FY 2010, there has been a great deal of discussion between project staff and NEPA staff, especially for the LBNE and Mu2e projects. In FY 2010, 10 categorical exclusions (CX) and one environmental assessment (EA) determination were issued by DOE at the recommendation of the Laboratory's NEPA Coordinator.

The Laboratory's ES&H Section and FSO are responsible for Fermilab's compliance with 16 environmental permits. During FY 2010, the Illinois Environmental Protection Agency (IEPA) conducted three inspections including a NPDES Permit/Outfall Inspection, a RCRA Hazardous Waste Inspection, and an Air Emissions Inspection. The IEPA found no violations during its inspections of the Laboratory's Environmental programs. In fact, the IEPA inspectors commended the Laboratory on its management of the environmental programs and the proactive approach. Terms used by the IEPA inspectors at the inspection wrap-ups included words like "great shape" and "great operations". The IEPA air inspector said that no one that he has inspected has a vapor recovery system at a fueling station like the Laboratory's.

Tracking the various deliverables to ensure that compliance due dates are achieved is key. In FY 2010, all regulatory permits and reports were submitted by the Laboratory on or before the respective due dates. A major milestone achieved in FY 2010 was the modification of Fermilab's RCRA permit.

In FY 2010, DOE issued three assessment reports of the Laboratory's environmental programs. These included the Environmentally Preferable Purchasing (EPP) assessment, the Spill Prevention, Control and Countermeasure (SPCC) assessment, and the GHG site assist visit. The scope of the EPP assessment was to evaluate the EPP program against the requirements of Executive Order 13423. Three findings were identified related to identification of EPP products and activities, clearly assigned EPP roles and responsibilities, and completion of an environmental management program (EMP) to study the EPP program. The scope of the SPCC assessment was to evaluate the Laboratory's SPCC program against the requirements of 40 CFR 112. Findings were identified related to lack of secondary containment at emergency generators, discharging water from the diked areas at the Kautz Road and Master Substations without observing potential for oil releases; and not meeting all documented requirements. The Laboratory will complete its proposed corrective actions by October 29, 2010. In FY 2010, the Laboratory has made great strides in complying with the SPCC regulations by preparing an SPCC Plan, training staff that handle oil, and conducting inspections of oil storage areas. However, the SPCC regulations have been in effect since 2002. The scope of the Greenhouse Gas (GHG) site assist visit was to provide an independent outlook of the Laboratory's efforts related to GHG accounting and inventory processes as well as to share available guidance and practices related to GHG and Executive Order 13514. The Laboratory provided feedback regarding GHG data collection and reporting to FSO and Headquarters staff. This feedback was taken back to DOE Headquarters for distribution to sites and offices nationwide.

Four new Environmental Monitoring Program (EMP) plans have been developed. Each EMP seeks to improve a significant environmental aspect related to the operation of the Laboratory. One example of an EMP is the establishment of a pilot program for the recycling on polystyrene.

| Element  | Letter<br>Grade | Numerical<br>Score | Objective<br>Weight | Weighted<br>Score | Overall<br>Score |
|--|-----------------|--------------------|---------------------|-------------------|------------------|
| Goal 5.0: Sustain Excellence and<br>Enhance Effectiveness of Integrated<br>Safety, Health, and Environmental<br>Protection |                 |                    |                     |                   |                  |
| 5.1: Provide a Work Environment that<br>Protects Workers and the<br>Environment  | B+              | 3.4                | 40.0%               | 1.36              |                  |
| 5.2: Provide Efficient and Effective<br>Implementation of Integrated Safety,<br>Health and Environment Management          | A-              | 3.5                | 40.0%               | 1.40              |                  |
| 5.3: Provide Efficient and Effective Waste Management, Minimization, and Pollution Prevention                              | B+              | 3.2                | 20.0%               | 0.64              |                  |
|  |                 |                    |                     | Total             | 3.40             |

Table 5.1 - 5.0 SC Program Office Performance Goal Score Development

| Score | 0.1-<br>0.7 | 0.8-<br>1.0 | 1.1-<br>1.7 | 1.8- | 2.1-<br>2.4 | 2.5-<br>2.7 | 2.8-<br>3.0 | 3.1-<br>3.4 | 3.5-<br>3.7 | 3.8-<br>4.0 | 4.1-<br>4.3 |
|-------|-------------|-------------|-------------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Grade | F           | D           | C-          | C    | C+          | B-          | B           | B+          | A-          | A           | A+          |

Table 5.2 - 5.0 Goal Final Letter Grade

Goal 6.0: Deliver Efficient, Effective, and Responsive Business Systems and Resources that Enable the Successful Achievement of the Laboratory Mission(s)

This Goal evaluates the Contractor overall success in deploying, implementing, and improving integrated business systems that efficiently and effectively support the mission(s) of the Laboratory.

### The weight of this Goal is 20.0%

The Laboratory has successfully completed all Notable Outcomes associated with Goal 6.0. The Fermilab Time and Labor System was completed on schedule and has already proven to be beneficial to Laboratory operations. No financial vulnerabilities have been identified for FY 2010. The Laboratory is compliant with all ARRA requirements as evidenced by two audits, including one by the Office of Inspector General. The Laboratory has roughly doubled the value of procurements in FY 2010 and maintained Balanced Scorecard levels with no additional staff.

### 6.1: Provide an Efficient, Effective, and Responsive Financial Management System(s)

Weight:

20.00%

Score:

3.3

Grade:

B+

Notable Outcome: FNAL will complete full implementation of the electronic FNAL Time and Labor system by the end of the third quarter, FY 2010.

The Laboratory completed full implementation of the Fermilab Time and Labor System for all exempt and non-exempt employees on June 22, 2010, thereby successfully meeting this Notable Outcome. In addition, the adoption of the hosted Kronos time card systems allowed the Laboratory to reduce development time and effort along with reducing future system support requirements. Business processes have been reviewed and changed, as necessary, to align with industry best practices.

<u>Notable Outcome:</u> Efficiently and effectively manage procurement and accounting activities in conjunction with the American Recovery and Reinvestment Act funding in accordance with all rules and requirements. No significant OIG or FNAL Internal Audit findings will serve as the measurement of success in meeting this critical outcome.

The Laboratory implemented a system to provide data collection and reporting capability to support the effective management of procurement and accounting activities associated with ARRA funding. As a result of implementation of strong controls over ARRA funds, the OIG report on NOvA ARRA funds had no findings and determined them to be in compliance with funds segregation and reporting requirements. Furthermore, the Laboratory's draft Internal Audit Report on procurement controls applicable to ARRA funding contained no findings.

In addition, the purchase card system was migrated to a modern hardware platform to improve system reliability and reduce support costs. To assist in tracking ARRA funding within the procurement and accounting departments, a system was created to provide data collection and reporting capabilities. The Laboratory has maintained a high-level of activity during FY 2010, issuing approximately 55,000 payroll checks and 30,000 invoices. The Laboratory successfully met all budget submission and reporting deadlines to DOE. The Management Representation Letter and Assurance Memorandums submitted found no vulnerabilities or areas for concern.

### 6.2: Provide an Efficient, Effective, and Responsive Acquisition Management System

Weight:

15.00%

Score:

3.5

Grade:

A-

Notable Outcome: FNAL Procurement will score a 90% against their Balanced Scorecard metrics for FY 2010.

The FY 2010 Balanced Scorecard overall total is 93%. During this year the Laboratory managed procurement obligations totaling \$270M, as compared to the FY 2009 total obligations of \$143M, which is a record amount of obligations ever recorded for the Laboratory. The Procurement Department did not increase the overall staff even with the increased workload from additional obligations. Also, 580 ARRA procurement actions totaling \$67M were processed. The Laboratory continues to improve its performance by monitoring and modifying its procurement policies and procedures. A Procurement Approval Form was modified to reflect adequate cost/price documentation where a Procurement Memorandum was not required. There were no findings from the Office of Inspector General (OIG) ARRA Audit. Nor were there any findings or observations from the Fermilab Internal Audit of ARRA procurements. The Laboratory has implemented electronic submission of Service Contract Act approval requests which improves the receipt time of the requests and the expediting of these requests. In addition, the Sole Source Justification Limit has been increased from \$5,000 to \$10,000 to allow procurement staff the ability to spend more time leveraging and negotiating higher dollar value

acquisitions. This new threshold still remains lower than other SC laboratories. The Laboratory also used effective procurement competition to reintegrate the security services requirement back into the Laboratory from the FSO within the necessary time constraints.

### 6.3: Provide an Efficient, Effective, and Responsive Property Management System

Weight:

15.00%

Score:

3.4

Grade:

B+

Notable Outcome: BSS/Transportation Services will upgrade its vehicle fleet maintenance software from the current FOCUS database to the Sunflower Maintenance module, thereby replacing an unsupported system with a more modern system that is integrated with other Property management (Sunflower) software. This will ensure the long term viability of the fleet management system.

The Laboratory has achieved this Notable Outcome and the personal property and motor vehicle management systems were approved in August 2010 based on an assessment performed by the Chicago Integrated Support Center, Acquisition Division. The assessment identified areas for improvement, mainly in property procedures, post inventory analysis, memory devices disposal. In the area of Motor Vehicle Management the Laboratory needs to expand its written procedures for vehicle replacement and vehicle utilization to cover all the processes used for vehicle utilization, which includes the site bus service. The Laboratory's overall Balanced Scorecard total is 93 out of 100 points, which is one point above the "meets" level of 92. The Laboratory did not meet expectations in the area of making 90% of Property available within 60 days of local disposition. Only 80% of the Laboratory's actions were processed within 60 days. However, the Laboratory met or exceeded its goals in all other areas.

### 6.4: Provide an Efficient, Effective, and Responsive Human Resources Management System and Diversity Program

Weight:

20.00%

Score:

3.4

Grade:

B+

<u>Notable Outcome:</u> FNAL will design/implement a Succession Plan and Executive Pay Grade Structure for senior management positions (Deputy Director, Chief Operating Officer/Associate Director, Chief Financial Officer, and Chief Information Officer) by September 30, 2010.

This Notable Outcome was met when the Succession Plan was completed and executed for all six Key Personnel/Senior Executive positions at the Laboratory. The Plan was designed using "best practices" from other Office of Science laboratories and industry. The FRA Board of Directors Visiting Committee on Administration and Operations found the Laboratory's program to be a noteworthy practice. The program will be expanded beyond the six Senior Management positions identified at the onset of the project to include additional positions during FY2011. Also, the development of a formal, documented Executive Pay Grade Structure was completed, resulting in grading of the six Laboratory Senior Executive positions that were previously ungraded. The remaining supervisory/managerial positions will be reviewed during Phase 2 of the effort being completed during FY2011.

In addition to successful implementation of the above FY2010 Notable Outcome, the Laboratory achieved positive performance results under Objective 6.4 including the design of a web-accessible "Who Does What in HR" brochure; a fully implemented Fermilab Diversity Council which performs a Laboratory-wide mentoring program, sponsorship of diversity events, and produces a technical recruiting video; and completed entry of over 1,800 employees into the e-Verify System. Long Term Disability (LTD) premiums were reduced resulting in a savings of \$67,500 for the Laboratory as a result of renewal negotiations and review.

# 6.5: Provide Efficient, Effective, and Responsive Management Systems for Internal Audit and Oversight; Quality; Information Management; and Other Administrative Support Services as Appropriate

Weight:

25.00%

Score:

3.3

Grade:

B+

Notable Outcome: Complete scheduled FY 2010 milestones and key activities identified in the DOE approved Quality Implementation Plan for an Integrated Quality Assurance Program. FRA will complete the start up of the Assessment Program and have it fully operational by 6/30/2010 in addition to implementing the Lessons Learned Program by 3/31/2010.

The Notable Outcome has been achieved. On a quarterly basis, representatives from the Office of Quality and Best Practices (OQBP) brief FSO on the status of Integrated Quality Assurance (IQA) implementation. OQBP set and achieved an aggressive schedule of activities, particularly in the area of assessments. The OQBP has implemented major initiatives such as the comprehensive assessment program and the development of a site-wide lessons learned program and tracking database.

The Laboratory introduced the Engineering Manual, the Management Assessment Procedure, the Lesson Learned Program, and the Fermilab Corrective & Preventive Action Procedure for use site-wide. These programs contribute significant elements of the Laboratory's Quality Implementation Plan, consistent with recommendations provided in previous DOE reviews.

In addition to the Notable Outcome, the Fermilab Internal Audit Group (IAG) has met the FY2010 audit schedule with no findings. During FY2010, IAG developed a Memorandum of Understanding outlining the parameters of reciprocal Internal Audit Collaboration activities with ANL's Internal Audit Department and engaged in mutually beneficial collaborative projects with ANL's auditors. The collaboration resulted in exchange of audit techniques, programs, and methodologies. An independent external peer review of the Fermilab internal audit activity was completed November 6, 2009. The team concluded that IAG complies with The Institute of Internal Audit (IIA) International Standards for the Professional Practice of Internal Auditing. No significant findings were noted, and optional suggestions to enhance existing procedures were adopted in the spirit of continuous quality improvement.

The IAG has performed outreach by giving presentations as part of the Laboratory's management training program, "Fermilab Functions." The presentations include an overview of the internal audit process through a Procurement Card audit, and lessons learned from typical findings. Internal Audit actively participated in a leadership role in the DOE M&O Contractors Internal Audit Directors Professional Standards Subcommittee by maintaining the Internal Audit Peer Review Schedule for the contractor community and providing technical guidance to peer review teams.

#### 6.6: Demonstrate Effective Transfer of Technology and Commercialization of Intellectual Assets

Weight:

5.00%

Score:

3.2

Grade:

B+

The Laboratory has disclosed five inventions for FY 2010 and continues to examine its internal processes for improvement opportunities within its routine transactions involving CRADAs and WFO agreements. The Laboratory is currently in the process of moving the routine transaction handling portion of the Office of Research and Technology Applications (ORTA) function to procurement. This will create more efficient processing of future actions and will position the Laboratory to handle more activity in the future. A lot of the knowledge transfer for the Laboratory continues through numerous publications of articles to disseminate research.

| Element   | Letter<br>Grade | Numerical<br>Score | Objective<br>Weight | Weighted<br>Score | Overall<br>Score |
|---|-----------------|--------------------|---------------------|-------------------|------------------|
| Goal 6.0: Deliver Efficient, Effective, and Responsive Business Systems and Resources that Enable the Successful Achievement of the Laboratory Mission(s)   |                 |                    |                     |                   |                  |
| 6.1: Provide an Efficient, Effective, and Responsive Financial Management System(s)   | B+              | 3.3                | 20.0%               | 0.66              |                  |
| 6.2: Provide an Efficient, Effective, and Responsive Acquisition Management System  | A-              | 3.5                | 15.0%               | 0.53              |                  |
| 6.3: Provide an Efficient, Effective, and Responsive Property Management System   | B+              | 3.4                | 15.0%               | 0.51              |                  |
| 6.4: Provide an Efficient, Effective, and Responsive Human Resources Management System and Diversity Program  | B+              | 3.4                | 20.0%               | 0.68              |                  |
| 6.5: Provide Efficient, Effective, and<br>Responsive Management Systems for<br>Internal Audit and Oversight; Quality;<br>Information Management; and Other<br>Administrative Support Services as<br>Appropriate | B+              | 3.3                | 25.0%               | 0.83              |                  |
| 6.6: Demonstrate Effective Transfer of<br>Technology and Commercialization of<br>Intellectual Assets  | B+              | 3.2                | 5.0%                | 0.16              |                  |
|   |                 |                    |                     | Total             | 3.37             |

Table 6.1 - 6.0 SC Program Office Performance Goal Score Development

| Score 0.1- | 0.8-        | 1.1- | 1.8- | 2.1- | 2.5- | 2.8- | 3.1- | 3.5- | 3.8- | 4.1- |    |
|------------|-------------|------|------|------|------|------|------|------|------|------|----|
|            | 0.7 1.0 1.7 | 2.0  | 2.4  | 2.7  | 3.0  | 3.4  | 3.7  | 4.0  | 4.3  |      |    |
| Grade      | F           | D    | C-   | С    | C+   | B-   | В    | B+   | A-   | Α    | A+ |

Table 6.2 - 6.0 Goal Final Letter Grade

Goal 7.0: Sustain Excellence in Operating, Maintaining, and Renewing the Facility and Infrastructure Portfolio to Meet Laboratory Needs

This Goal evaluates the overall effectiveness and performance of the Contractor in planning for, delivering, and operations of Laboratory facilities and equipment needed to ensure required capabilities are present to meet today and tomorrow mission(s) and complex challenges.

The weight of this Goal is 15.0%

The Laboratory has exceeded the Notable Outcomes and expectations for Goal 7.0. Fermilab has secured external funding from the State of Illinois for a \$20M building funding. The Laboratory has quadrupled its workload by successfully planning and beginning construction on six ARRA GPP Projects in addition to four other GPPs. Work on the Utilities Upgrade Project has advanced and will provide

ongoing benefit for the Laboratory. The Laboratory has maintained an excellent track record for utilization and reuse of facilities.

# 7.1: Manage Facilities and Infrastructure in an Efficient and Effective Manner that Optimizes Usage, Minimizes Life Cycle Costs, and Ensures Site Capability to Meet Mission Needs

Weight:

50.00%

Score:

3.7

Grade:

Notable Outcome: FNAL will update FNAL Transformational Energy Action Management (TEAM) Executable Plan (EP) for FSO approval by the date specified in the DOE guidance. FNAL will meet specific FY 2010 goals established in this EP.

This Notable Outcome was accomplished. The EP was updated and approved by December 31, 2009 and all FY 2010 goals have been met. This includes energy reduction, water reduction, renewable energy, fleet alternative fuels, and sustainability.

The Laboratory has exceeded expectations by surpassing the target percentage of scheduled maintenance as measured against total maintenance (93% versus a target of 80%), enhanced utilities uptime for accelerator operations (the accelerator complex downtime due to electrical outage for the year was 0.3%, which is significantly below the target goal of 5%, there was no accelerator complex downtime due to Industrial Cooling Water failures, which again is well below the target goal of 5%), and participating in an electric curtailment program, which saved nearly \$900K in FY10. Fermilab competed electrical curtailment programs among three different curtailment coordinators and subsequently negotiated a better curtailment agreement than the one offered by the local utility. Fermilab Facilities Department provided the technical expertise required for the procurement of calendar year 2011, 2012, and 2013 electricity utilizing an innovative dollar cost averaging strategy (this contract is estimated to be roughly \$30M per year).

The Laboratory has done an excellent job of reusing facilities. The Meson Detector Building, Wide Band Hall, New Muon Laboratory, C0 Assembly Building, IB-1, MP-9, and Sidet facilities have been reused for fabrication, research, and testing purposes. Currently, the Laboratory has a utilization rate of 99% for buildings on site as compared to the average SC rate of 91% utilization.

## 7.2: Provide Planning for and Acquire the Facilities and Infrastructure Required to support the Continuation and Growth of Laboratory Missions and Programs

Weight:

50.00%

Score:

3.4

Grade:

B+

Notable Outcome: FNAL will develop a Mission Readiness Plan for FY2010 which includes participation in two peer reviews and the development of FNAL Mission Readiness policies and procedures. This plan will be implemented by the end of the third quarter, FY2010.

The Laboratory has developed the required Mission Readiness plan, policies and procedures and submitted them to FSO on June 29<sup>th</sup>, which met the scheduled submittal milestone. The Laboratory also participated in the Argonne National Laboratory and Princeton Plasma Physics Laboratory peer reviews. In addition, the Laboratory led the Thomas Jefferson National Accelerator Facility peer review. Additionally, the Laboratory continues to provide membership on the Mission Readiness Steering committee, which coordinates timing and participation in peer reviews and the lines of inquiry that are used during the reviews.

Notable Outcome: FNAL will complete final designs and start construction on American Recovery and Reinvestment Act (ARRA) General Plant Projects (GPP) Augmentation covered under Work

### Authorization Number KA/CH14/9/ARRA-1, consistent with established milestones in the approved Project Operating Plans.

Designs for all six ARRA GPP sub-projects are complete and construction has started on these all as well. All project milestones have been met. There have been no recordable incidents on these projects. The media has expressed interest on these projects, and good public outreach for job creation has been created.

Other accomplishments above expectations include project planning for the Utilities Upgrade Project (all CD-1 documents have been prepared and the project successfully completed a CD-1 SC Independent Project Review), and successfully completing under budget and ahead of schedule four GPPs (the DWS at WH, GCC Room C, MINU, and Electric Feeder projects). In addition, the Laboratory has developed and is executing four times the normal volume of work, including \$34M of ARRA GPPs and support to line item projects including NovA, LBNE, Mu2e, MicroBoone, and the Utilities Upgrade Project. The Laboratory also supported the application and development of an Illinois State grant for a project that resulted in a \$20M grant.

| Element  | Letter<br>Grade | Numerical<br>Score | Objective<br>Weight | Weighted<br>Score | Overall<br>Score |
|--|-----------------|--------------------|---------------------|-------------------|------------------|
| Goal 7.0: Sustain Excellence in<br>Operating, Maintaining, and<br>Renewing the Facility and<br>Infrastructure Portfolio to Meet<br>Laboratory Needs                                |                 |                    |                     |                   |                  |
| 7.1: Manage Facilities and Infrastructure in an Efficient and Effective Manner that Optimizes Usage, Minimizes Life Cycle Costs, and Ensures Site Capability to Meet Mission Needs | A-              | 3.7                | 50.0%               | 1.85              | ,                |
| 7.2: Provide Planning for and Acquire the Facilities and Infrastructure Required to support the Continuation and Growth of Laboratory Missions and Programs                        | B+              | 3.4                | 50.0%               | 1.70              |                  |
|  |                 |                    |                     | Total             | 3.55             |

Table 7.1 - 7.0 SC Program Office Performance Goal Score Development

| Score | 0.1- | 0.8- | 1.1- | 1.8- | 2.1- | 2.5- | 2.8- | 3.1- | 3.5- | 3.8- | 4.1- |
|-------|------|------|------|------|------|------|------|------|------|------|------|
|       | 0.7  | 1.0  | 1.7  | 2.0  | 2.4  | 2.7  | 3.0  | 3.4  | 3.7  | 4.0  | 4.3  |
| Grade | F    | D    | C-   | С    | C+   | B-   | В    | B+   | A-   | Α    | A+   |

Table 7.2 - 7.0 Goal Final Letter Grade

Goal 8.0: Sustain and Enhance the Effectiveness of Integrated Safeguards and Security management (ISSM) and Emergency Management Systems

This Goal evaluates the Contractor overall success in safeguarding and securing Laboratory assets that supports the mission(s) of the Laboratory in an efficient and effective manner and provides an effective emergency management program.

### The weight of this Goal is 15.0%

The Laboratory has met the expectations for Goal 8.0. A completed review of the Fermilab Emergency Management Program showed no significant vulnerabilities for the Laboratory. The Laboratory has completed all drills and evacuation scenarios as outlined in the Emergency Management Plan, including additional participation by those facilities not directly required as a matter of best practices. Extensive PII training and review has taken place to aid in preventing any future loss or compromise.

### 8.1: Provide an Efficient and Effective Emergency Management System

Weight:

40.00%

Score:

3.2

Grade:

B+

Notable Outcome: A joint FNAL/FSO review of the Emergency Management (EM) Program will be performed no later than June 30, 2010. Corrective actions and lessons learned will be developed as appropriate.

FSO and the Laboratory conducted a joint review of the Fermilab Emergency Management Program. The review was performed May 11<sup>th</sup> - June 24<sup>th</sup>, 2010. The final report concluded that the Laboratory's Emergency Management System meets the requirements of DOE Order 151.1C "Comprehensive Emergency Management System". The report identified three lower level findings that the Laboratory will utilize to improve the operation of its Emergency Management System. The ultimate conclusion of the assessment is that the Fermilab Hazard Assessment Document (HAD) demonstrates that no series of credible accident scenarios will disrupt Laboratory operations and release hazardous materials off site. The Laboratory will submit a corrective action plan by November 2010 to address the three findings identified within the report.

Mandatory evacuation and sheltering drills are required by the Fermilab Emergency Plan, consistent with the National Fire Prevention Awareness and the State of Illinois Tornado Awareness Weeks. All required buildings had both fire and tornado drills in FY 2010. Other facilities not required by the Emergency Plan also participated in drills as a best management practice. The drill records were reviewed as a part of the joint DOE/Fermilab review. A follow-up action to this review is to add any drill outcomes or modification to emergency drill documents into the Laboratory's oversight tracking database.

In May 2010, the Emergency Operations Center (EOC) was assembled to respond to a suicide that occurred on site. The EOC, of which DOE-FSO is an active participant, effectively responded to the event. Following the event, FSO and the Laboratory participated in a post incident critique which identified a number of EOC improvements that could be made. As a result of the critique, the ES&H Section revised procedures and will record the critique observations in its oversight database.

### 8.2: Provide an Efficient and Effective System for Cyber-Security

Weight:

45.00%

Score:

3.4

Grade:

B+

Notable Outcome: All FNAL employees responsible for handling PII will receive training by the end of the first quarter, FY 2010, and a review will be conducted of all applications in the ES&H

area to clarify the need to maintain and handle PII. A new set of security plans will be written and approved in response to this review by the end of June 2010.

The Laboratory has completed all necessary training for those personnel who are responsible for handling Personally Identifiable Information (PII). An extensive survey of all ES&H systems was completed and adjusted as necessary. Security Plans were updated, to include the Medical Department which was rewritten and approved.

<u>Notable Outcome</u>: In accordance with the FNAL Corrective Action Plan addressing S&S Cyber Security Findings, dated May 2009, all computers will be monitored using centrally managed tools to inspect the configuration for compliance with Microsoft Windows Class Baseline Security Configuration by July 2010.

The Laboratory has engaged in system monitoring for all Windows, MacOS, and Linux systems using centrally managed tools in compliance with the appropriate Baseline Security Configuration.

In addition to the Notable Outcomes, the TunelTUp Campaign has improved security efficiency and consistency of management of desktops and laptop computers. Over 3,800 desktop systems are now reporting to the inventory repository. Additional efforts have been taken to eliminate unnecessary user accounts with administrative privileges and enforce password complexity requirements for local and email accounts.

The Laboratory has made efforts to eliminate PII data from the information provided to the subcontract vendors. For those situations where this cannot be avoided, Interconnection Agreements have been written and approved by DOE.

### 8.3: Provide an Efficient and Effective System for the Protection of Special Nuclear Materials, Classified Matter, and Property

B+

Weight:

5.00%

Score:

3.2

Grade:

The Laboratory stated in September correspondence to FSO that there were no inventory adjustments during this fiscal year. The Laboratory completed the 2010 Nuclear Materials Allotment Forecast Data and the Annual Nuclear Materials Management Plan (NMMP) per DOE O 410.2, *Management of Nuclear Materials*. In the forecast, the Laboratory declared the need for depleted uranium and Americium-241 actively being used for high energy physics programs. The annual physical inventory was conducted in March 2010 and no discrepancies were found. The ES&H Section is working with PPD to build a carport to protect the deuterium gas cylinders at the Railhead. The Laboratory also issued a report from self-assessment of Fermilab's Safeguards and Security Nuclear Materials Control and Accountability Program in April 2010. The report did not identify any major issues.

### 8.4: Provide an Efficient and Effective System for the Protection of Classified and Sensitive Information

Weight:

10.00%

Score:

3.2

Grade:

B+

The Laboratory holds no classified information. Only occasionally is the Laboratory privy to sensitive (proprietary) information; however, the Laboratory has had none for this year. All of the Computer Systems that process/sore PII were identified and where necessary, changes were made to safeguard this information. Several office processes were analyzed and modified to ensure proper handling of Protected PII.

The Laboratory provided all employees that handle PII with new, advanced training. Employees, including those in ES&H, were verified as having completed PII training in FY 2010.

| Element  | Letter<br>Grade | Numerical<br>Score | Objective<br>Weight | Weighted<br>Score | Overall<br>Score |
|--|-----------------|--------------------|---------------------|-------------------|------------------|
| Goal 8.0: Sustain and Enhance the Effectiveness of Integrated Safeguards and Security management (ISSM) and Emergency Management Systems |                 |                    |                     |                   |                  |
| 8.1: Provide an Efficient and Effective<br>Emergency Management System   | B+              | 3.2                | 40.0%               | 1.28              |                  |
| 8.2: Provide an Efficient and Effective System for Cyber-Security  | B+              | 3.4                | 45.0%               | 1.53              |                  |
| 8.3: Provide an Efficient and Effective<br>System for the Protection of Special<br>Nuclear Materials, Classified Matter,<br>and Property | B+              | 3.2                | 5.0%                | 0.16              |                  |
| 8.4: Provide an Efficient and Effective System for the Protection of Classified and Sensitive Information                                | B+              | 3.2                | 10.0%               | 0.32              | - W H            |
|  |                 |                    |                     | Total             | 3.29             |

Table 8.1 - 8.0 SC Program Office Performance Goal Score Development

| Score | 0.1-<br>0.7 | 0.8-<br>1.0 | 1.1-<br>1.7 | 1.8-<br>2.0 | 2.1-<br>2.4 | 2.5-<br>2.7 | 2.8-<br>3.0 | 3.1-<br>3.4 | 3.5-<br>3.7 | 3.8-<br>4.0 | 4.1- |
|-------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|
| Grade | F           | D           | C-          | С           | C+          | B-          | В           | B+          | A-          | Α           | A+   |

Table 8.2 - 8.0 Goal Final Letter Grade